



Using a Theory of Action to Develop Performance Indicators to Measure Progress Toward a SIMR

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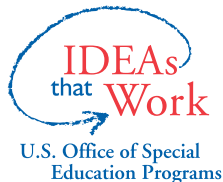


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Overview

SSIP Phase I plans require states to determine a “state-identified measurable result” (SIMR) through a systematic process that is summarized graphically through a Theory of Action (ToA). A ToA sets forth assumptions or hypotheses about how an improvement strategy works. These hypotheses are then tested during an evaluation. The power of a ToA is in its specificity of thought and in the explicit reasoning that calls attention to the essential steps and checkpoints in implementing an improvement strategy. Thus, the ToA establishes a clear path toward the end goal of affecting child and family outcomes. Importantly, the ToA acts as a set of checkpoints to evaluate if the expected outcomes at each step along the way are realized and, if they are not, suggests where to intervene to get the improvement strategy back on track.

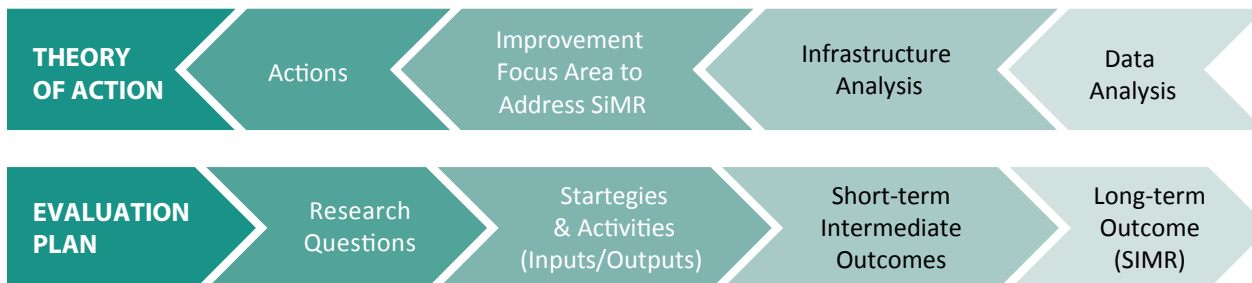
This paper demonstrates how the work completed under SSIP Phase I contributes to a key component of the activities required during Phase II: an evaluation plan. By using the ToA as an outline or a roadmap for the evaluation plan, state SSIP leaders can identify and measure, through performance indicators, the checkpoints necessary for marking progress toward the SIMR. The first two sections of this white paper illustrate the relationship between SSIP Phase I and Phase II and briefly demonstrate how the ToA can be used to develop the evaluation plan and formulate evaluation questions. The third section shows in detail how SSIP leaders can use a ToA to develop performance indicators that measure progress toward the SIMR.

The Relationship Between SSIP Phase I and Phase II

Planning an evaluation and conducting an evaluation are companion processes. Unfortunately, different audiences use different terms for similar concepts. The resulting confusion undermines integration of planning and evaluation, so it is important to make the connection between the different terms. As illustrated in Exhibit 1, the SSIP evaluation plan (Phase II), directly proceeds from the activities conducted in Phase I; that is, from

- **An analysis** of student outcomes, including drilling deep into the data to understand the performance of disaggregated student groups (e.g., ages, disability, type of outcome, location);
- **An analysis** of infrastructure strengths and weaknesses, including governance, fiscal, technical assistance, and monitoring systems;
- **Discussions** by stakeholder groups, who thoughtfully frame an end result for the program’s efforts, called a SIMR; and
- **Identification** of coherent improvement strategies that will build state and local education agency (LEA) capacity to achieve the SIMR.

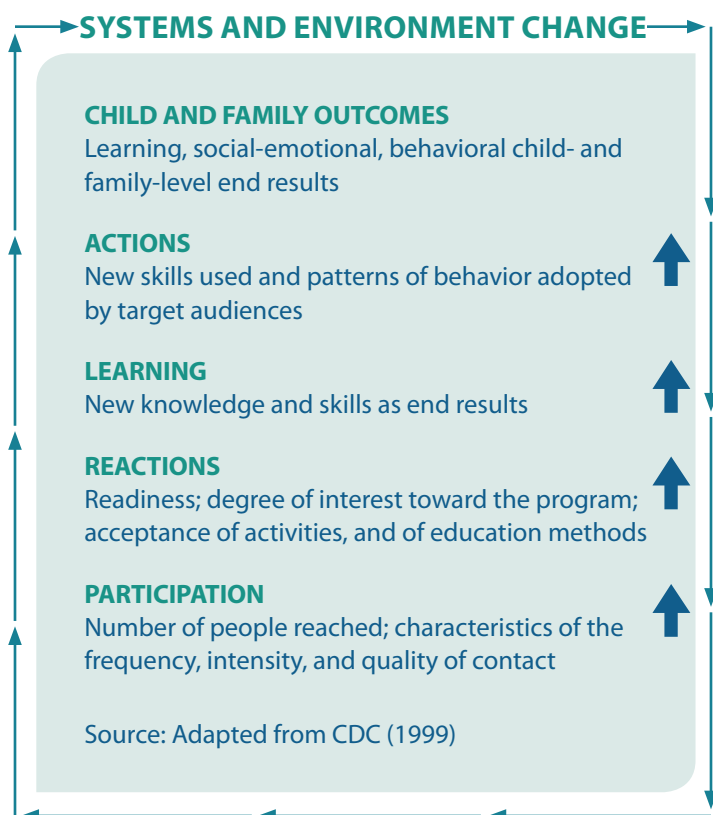
Exhibit 1. Linking SSIP Phase I to SSIP Phase II



The state's response to improving the SIMR is articulated graphically in a ToA and can be specified as strategies, actions, tactics, or a host of other terms. The strategies generate potential evaluation questions, provide insights on the program's activities and some or all of the targeted audiences, make explicit short-term and intermediate outcomes, and clarify the long-term results desired by the program.

Evaluation plans are strengthened by collecting evidence of impact at several levels or steps in an outcomes hierarchy; information on outcomes from the proximal steps helps to explain outcomes at the distal steps, which take longer to achieve. All steps in the hierarchy are necessary outcomes and demonstrate progress toward the results-oriented outcome, the SIMR (see Exhibit 2).

Exhibit 2. Hierarchy of Possible Outcomes



To illustrate, a program's initial intended aim is to obtain participation among targeted staff and positively influence their reactions to the program activities that affect their learning (e.g., knowledge, opinions, skills). Through this learning, people and organizations take actions that result in behavioral and social change, including implementing the program with fidelity in the relevant setting and children and families demonstrating continued progress toward the expected outcome within the established timeframe. Concurrently, systems and environmental changes in conditions are the result of recommendations, actions, policies, and practices.¹

¹ Evaluating the progress of change in the infrastructure is beyond the scope of this paper. ECTA/DaSy Centers have an excellent tool to use indicators as a means of tracking progress of the seven infrastructure components (see The DaSy Center. (2014). *DaSy Data Systems Framework*. Menlo Park, CA: SRI International).

Using a ToA to Develop an SSIP Evaluation Plan

When developing the SSIP evaluation plan, SSIP state leaders need not start from scratch. Instead the ToA provides an initial direction for the evaluation plan.

Exhibit 3 illustrates how a ToA for a multi-tiered system of supports (MTSS) strategy conveys three critical features of an evaluation plan: outcomes, target audiences, and activities.

Exhibit 3. Theory of Action as an Outline for an Evaluation Plan

Key Strands of Action	If the SEA	Then the LEA (e.g., teachers and administrators)	Then teachers/ support teams	So that
Multi-tiered systems of support	...provides <i>professional development opportunities and coaches</i> to elementary schools in target districts to assist in establishing robust multi-tiered systems of support...	...will increase its capacity to implement MTSS practices with fidelity...	... <i>monitor</i> students with disabilities more closely in terms of their academic and behavioral progress and needs ...and <i>more quickly and effectively provide supports and interventions</i> that help students with disabilities be successful academically and behaviorally....	Reading achievement for students with disabilities in elementary grades in target districts will improve.

Note: SIMR Outcome in BOLD; targeted audiences in Italics; and activities are underlined; SEA = state education agency.

Moving from **right to left** in the ToA above, the SIMR outcome defines what needs to be achieved and is an ambitious and *longer term outcome*:

Increase the percentage of students with disabilities in schools in target districts that score at least Basic on the state achievement test for grades 3-5 in reading. The number of students with disabilities scoring at least Basic will increase by 3 percentage points per year from the baseline score percentage. This rate of improvement constitutes an ambitious yet achievable goal that will ultimately raise the percentage of students with disabilities scoring Basic or higher by 15 percentage points over 5 years.

There are *targeted audiences* that the program needs to urge into action in order to make progress on addressing these educational challenges. Generally, district and

school, or early childhood and program staff need to take action. Some action may be needed by the families and communities. Some actions may be necessary by constituencies all across the state infrastructure. And finally, teachers and service providers must instruct, engage, and progress- monitor children in the program to produce the favorable child-level outcomes (the SIMR). In the ToA above, target audiences are at the state, LEA, school, and classroom levels.

It is the agency’s role to specify the strategies or activities required to be in place to achieve the outcomes in the targeted groups. Activities will vary with the audience and program. In the ToA above, the coherent improvement strategy is a robust system of multi-tiered supports. The specific activities related to the strategy may include providing professional development to elementary schools in target districts (SEA- and LEA-level

activity), providing coaches in schools in target districts (SEA- and LEA-level activity), establishing robust systems of multi-tiered supports in schools (LEA- and school-level

activity), monitoring students and providing supports (classroom-level activity).

Using a ToA to Develop Evaluation Questions

To be effective, an evaluation plan needs focus. This is where evaluation questions come in. There is no specific formula for writing evaluation questions; however, they must be asked in a manner that requires a response that can be accurately measured, analyzed, and reported.² Given that in many instances resources available for evaluations are limited, what do SSIP leaders and their stakeholders really need to know to understand how well the program's activities are being implemented and if the program has the expected impact on the target audiences and ultimately the SIMR population? Because the program activities and desired outcomes are made transparent in the ToA, it is easy to use it to develop evaluation questions.

Continuing with the example above, by aligning the evaluation questions to the hierarchy of outcomes, possible evaluation questions of the installation of MTSS practices include:

- 1. Participation outcome.** What proportion of teachers who were identified for receipt of the MTSS training participated? What proportion of the intended hours of professional development did teachers receive? What proportion of the intended hours of coaching did teachers receive?
- 2. Reaction outcome.** To what extent do the teachers agree that the MTSS practices can easily be implemented into their classroom instruction? To what extent do teachers report their readiness for using the

MTSS practices³ in their classroom and school? To what extent do teachers report the practices will improve student outcomes?

- 3. Learning outcome.** How well do teachers report that they understand how the MTSS practices influence student outcomes? To what extent do teachers rate their effective use of the MTSS practice highly?
- 4. Action outcome.** To what extent do teachers implement the MTSS practices with fidelity? To what extent do the teachers instruct students with the intended dosage and frequency?
- 5. Child and family outcome(s):**
 - a. What is the impact of MTSS on the reading achievement of students with disabilities in schools in target districts compared to the reading achievement of students with disabilities in comparison schools?
 - b. What is the impact of MTSS on the classroom behavior of students with disabilities in schools in target districts compared to the behavior of students with disabilities in comparison schools?
 - c. What is the impact of MTSS on the reading achievement of all students in target schools compared to the reading achievement of all students in comparison schools?

² From the IDC Interactive Institutes 2015, resources are available on writing evaluation questions. http://dasycenter.sri.com/downloads/DaSy_conferences/2014/DaSy_W04_QuestionsDataReports_ConnectingDataDots_FINAL090814_Acc2.pptx

³ In these evaluation questions, MTSS practices represent the program to influence student outcomes. The data collection instruments, however, would include questions that address each MTSS practice.

Identifying Performance Indicators of Progress for the Evaluation Plan

Identifying performance indicators helps guide and monitor progress toward the long-term outcome, or in the case of SSIP, the SIMR, and is important for several reasons: (1) When a new or large initiative is getting started, there may be clarity about the “big change” the program is to produce, but little else. (2) It is easy to place too much emphasis on listing program activities, many of which either cannot be measured or the measurement data necessary would overwhelm the evaluation and become burdensome to collect and costly to use. (3) Because the components of educational programs are often expressed in global or abstract terms, indicators—specific, observable, and measurable statements—help define exactly what we mean or are looking for and require the use of such terms as number of, percent of, mean of, or similar phrases. By working backward from the end outcomes and asking “how to,” SSIP leaders can identify what will be involved in producing change.

Indicators provide clear definitions of global outcome statements such as “Teachers measure student reading progress twice a week” or “Families adopt in-home literacy techniques.” The teacher-based indicator might specify the type of reading intervention, the duration, or the adherence to the intervention’s fidelity, for example: 90 percent of teachers will measure oral reading fluency of students in Tier 3 once a week. Likewise, the family indicator might specify the in-home techniques and the intensity or duration of their adoption, such as, all families will read to their children at least five times a week for 20 minutes each time. Indicators such as these provide clearer definitions of the global statement and help SSIP leaders understand how to measure progress toward the end outcome.

The use of indicators originates from a type of evaluation called performance measurement and can have many meanings. For our purpose, it is defined as regular measurement of the implemented service delivery and results (outcomes). Regular measurement of progress

toward specified outcomes is a vital component of any effort at managing for results. Performance measurement is a stakeholder-oriented process that focuses on maximizing benefit and minimizing negative consequences for the participants (Hatry, 2006). Specifically, a performance indicator is: *an observable measure of both the process and the outcome, at the child, classroom, teacher, family, school or district level, which identifies a specific numerical measurement indicating progress toward the outcome.* As noted earlier, a performance indicator usually begins with words, such as number of, percent of, ratio of, proportion of, or mean, or another similar phrase.

There are three levels or types of performance indicators, and each one contributes to marking progress toward the SIMR. Each one is defined below.

Types of Performance Indicators⁴

- **Indicators of short-term outcomes:** These outcomes are expected to lead to the desired end but are not themselves ends. There may be multiple short-term outcomes. Linking to the hierarchy of outcomes in Exhibit 2, examples of indicators of short-term outcomes include Participation outcome—percentage of teachers who rate highly the usefulness and feasibility of the program; Reaction outcome—percentage of teachers who express a high interest toward the program; Learning outcome—percentage of teachers who self-rate their positive changes in knowledge about the practice.
- **Indicators of intermediate outcomes:** Again, linking the intermediate indicators to the hierarchy of outcomes in Exhibit 2, action outcome examples include, demonstrating the new practice or skill,

⁴ Outputs from activities are not explicitly stated in these descriptions (e.g., number of courses offered, number or percentage of staff completing course). Managers and evaluators may elect to identify the outputs as part of a logic model sequence, but in this paper, the emphasis is on the indicators required for marking progress toward the SIMR (changes in behavior based on skills and knowledge).

including measures of the dosage, frequency, or quality of services,⁵ and are direct results of the improvement activities. Examples include frequency of MTSS meetings by teachers and administrators or percentage of educators observed implementing MTSS practices (e.g., continually progress-monitor students' behavior and academic progress, provide supports across the tiers).

- **Indicators of long-term outcomes:** These are the end results sought. For SSIP, this end result focuses

on child and family outcomes such as learning, social-emotional, behavioral child- and family-level end results. The indicator will specify to what extent students or families will increase their academic or functional performance, by how much, and over what time period.

Linking the outcomes and performance indicators is essential to marking or evaluating progress toward the intended results set forth by SSIP leaders. In the detailed example below, a state has identified that a subset of districts have large literacy achievement gaps between students with disabilities and their peers in the early grades (see Exhibit 4).

⁵ In the implementation science literature, these concepts are often referred to as effort, quality, and fidelity (Fixsen, Naoom, Blase, Friedman, & Wallace, 2005).

Exhibit 4. A Hypothetical State Rationale of a Theory of Action

SIMR: Improve reading achievement for elementary-age students with disabilities in a subset of districts with large achievement gaps between students with disabilities and their peers without disabilities.

Data and root cause analysis: Our data analysis revealed that the achievement of students with disabilities in reading (as measured by the statewide assessment) in the elementary grades was significantly below that of their peers without disabilities. The achievement gap, in terms of the percentage of students proficient in reading, was highest in grades 3, 4, and 5. While there were variations and differences in achievement by students' disability categories, race/ethnicity, and socioeconomic status, our stakeholder group (which included representation from local special education directors, special education teachers, general education teachers, school administrators, family advocacy groups, and higher education) was compelled by the overall level of low achievement in the elementary grades. They also noted that certain districts in the state had greater achievement gaps than others. Therefore, our state chose to focus its SIMR on improving reading achievement in the elementary grades in a subset of districts with the largest achievement gaps.

The state's root cause analysis revealed a strong relationship between students' educational environments and their academic achievement as measured by the statewide assessment. Specifically, elementary-age students educated in substantially separate placements as well as inside the regular class less than 40 percent of the day scored lower than similar students with disabilities educated in the regular classroom more than 80 percent of the day. In addition, a statewide survey of MTSS implementation revealed that districts reporting full implementation of an MTSS system also had higher rates of students with disabilities scoring proficient on the statewide assessment in reading than those reporting lower levels of implementation. Finally, our stakeholder group felt that poor instructional quality and lack of opportunities for general and special educators to co-teach were factors in the low achievement of some students with disabilities.

Based on the results of its root cause analysis, the state has identified a multi-pronged approach to improve academic outcomes for students with disabilities in reading in elementary schools in target school districts. This multi-pronged approach includes establishing robust MTSS in the elementary schools in target districts,

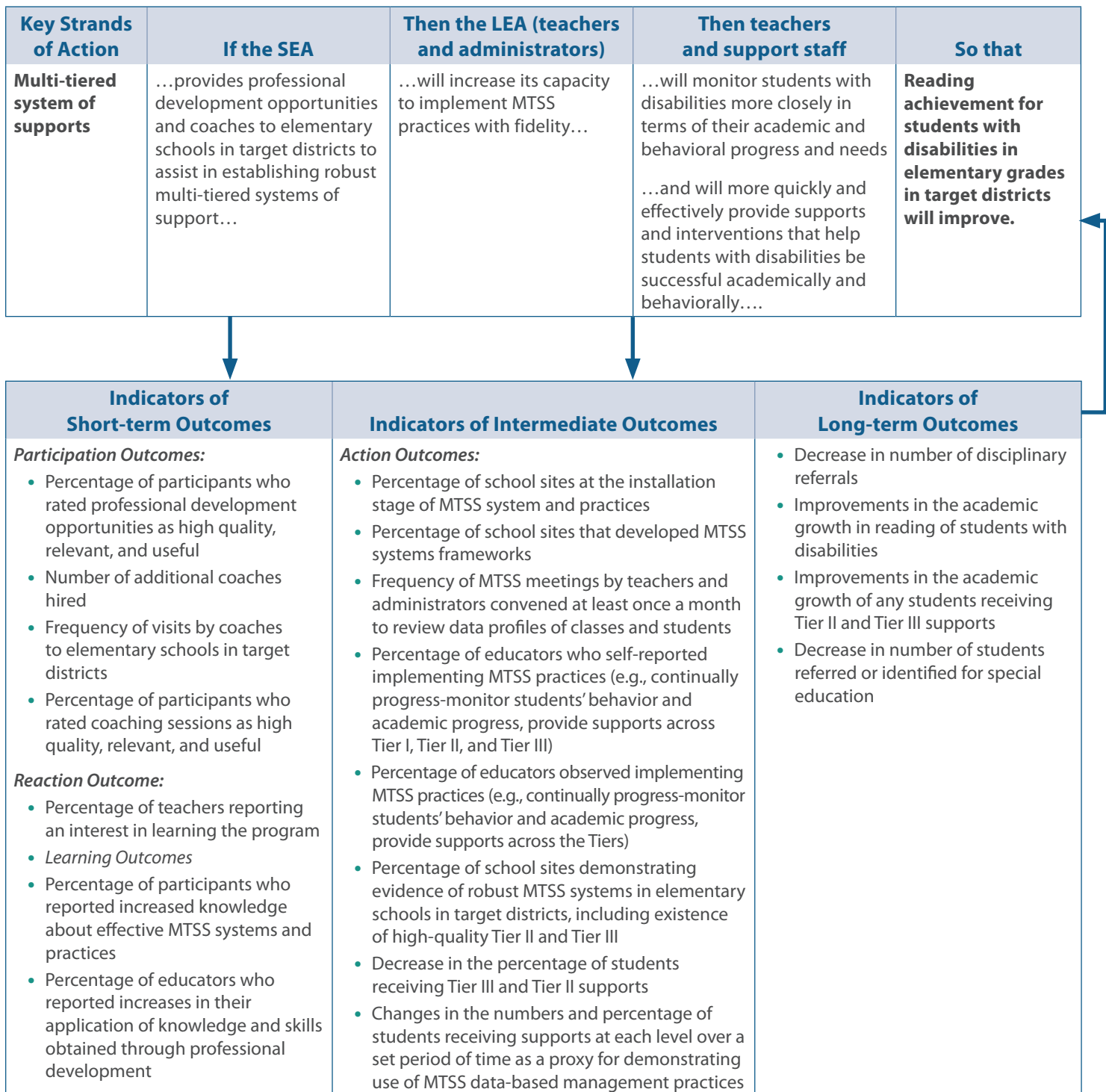
increasing access to the general education curriculum for students with disabilities, improving instructional quality, and encouraging co-teaching models (Exhibit 5). For the purposes of illustration, short-term, intermediate, and long-term outcomes and indicators are specified for just one of these strategies—MTSS (see Exhibit 6).

Exhibit 5. Example of a Multi-Pronged Theory of Action

Illustrative Example of a Theory of Action

Key Strands of Action	If the SEA	Then the LEA (teachers and administrators)	Then teachers and support staff	So that
Multi-tiered systems of support	...provides professional development opportunities and coaches to elementary schools in target districts to assist in establishing robust multi-tiered systems of support...	...will increase its capacity to implement MTSS practices with fidelity...	...will monitor students with disabilities more closely in terms of their academic and behavioral progress and needs ...and will more quickly and effectively provide supports and interventions that help students with disabilities be successful academically and behaviorally....	Reading achievement for students with disabilities in elementary grades in target districts will improve.
Educational environments	...provides professional development opportunities and coaches to elementary schools in target districts to explore data on educational environment and analyze where students with disabilities are receiving their instruction...	...will make more informed and intentional decisions about educational placements for students with disabilities...	...will provide students with disabilities access to the general curriculum....	
Instructional quality	...provides professional development opportunities and coaches to elementary schools in target districts on research-based instructional strategies in literacy...	...will implement evidence-based practices with fidelity to meet the individual needs of students with disabilities...	...will deliver high-quality instruction	
Co-teaching	...provides professional development opportunities and coaches to elementary schools in target districts to establish co-teaching models...	...will offer general and special educators the opportunity to work more closely together in the classroom to design lessons, support students, and braid best instructional strategies for students with disabilities and their peers...	...and will benefit from the shared knowledge and expertise of their colleagues in general and special education... ...will provide students with disabilities access to the general curriculum....	

Exhibit 6. Illustrative Example of a (Partial) Theory of Action Linked With Performance Indicators



Summary

This paper demonstrates how the activities completed under SSIP Phase I contribute to the evaluation planning component of SSIP Phase II, which then guides the evaluation work conducted in subsequent years. The ToA, as the product of data and infrastructure analysis, stakeholder discussions, and SIMR identification, visually depicts the underlying reasoning behind the choice of improvement strategies adopted by a state to achieve its long-term outcome (SIMR). Moreover, the ToA clearly defines the valued outcome(s), target audiences, and activities that a state will engage in over the life of its SSIP. Through this graphical argument, SSIP leaders and their stakeholders can generate important evaluation questions at each level of the outcomes hierarchy, identify essential steps and checkpoints in implementing selected improvement strategies, and evaluate if the expected outcomes at each step along the way are realized.

SSIP evaluation plans are strengthened by periodic collection of evidence of impact at each level in an outcomes hierarchy. Regular measurement of progress toward specified outcomes is a vital component of any effort at managing for result as it assures SSIP leaders that the system is on track or indicates that mid-course

changes may be necessary. Performance indicators are a common method of collecting this evidence as they are written in specific, observable, and measurable language to define exactly what SSIP leaders mean or are looking for and require the use of such terms as number of, percent of, mean of, or similar phrases. This paper describes three types of performance indicators. Indicators of short-term outcomes measure participation, reaction, and learning outcomes in the hierarchy of outcomes. Indicators of intermediate outcomes measure action outcomes in the hierarchy of outcomes. Finally, indicators of long-term outcomes measure the end results sought, which for the SSIP focuses on child and family outcomes such as learning, social-emotional, behavioral child- and family-level end results.

Woven throughout this paper is a practical illustration of how to use a ToA to develop evaluation questions and performance indicators linked to an outcomes hierarchy. While the example in the paper is focused on a single component of a multi-pronged ToA, the process outlined can be replicated to guide SSIP leaders through some of the steps necessary to develop the evaluation component of SSIP Phase II.

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